ORIGINAL ARTICLE

# A Survey of German Physicians in Private Practice About Contacts With Pharmaceutical Sales Representatives

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## SUMMARY

Background: Physicians and pharmaceutical sales representatives (PSR) are in regular contact. The goal of the present study is systematically to assess the kind of contacts that take place and their quality with a survey of physicians in private practice. A further goal is to determine whether alternatives to current practices can be envisioned.

Methods: 100 physicians in each of three specialties (neurology/psychiatry, general medicine, and cardiology) were surveyed with a questionnaire containing 37 questions. 208 (69.3%) questionnaires were anonymously filled out and returned.

Results: 77% (n = 160) of all physicians were visited by PSR at least once a week, and 19% (n = 39) every day. Pharmaceutical samples, items of office stationery and free lunches were the most commonly received gifts. 49% (n = 102) stated that they only occasionally, rarely, or never receive adequate information from PSR, and 76% (n = 158) stated that PSR often or always wanted to influence their prescribing patterns. Only 6% (n = 13) considered themselves to be often or always influenced, while 21% (n = 44) believed this of their colleagues. The physicians generally did not believe that PSR visits and drug company-sponsored educational events delivered objective information, in contrast to medical texts and non-sponsored educational events. Nonetheless, 52% (n = 108) of the physicians would regret the cessation of PSR visits, because PSRs give practical prescribing information, offer support for continuing medical education, and provide pharmaceutical samples.

Conclusion: PSR visits and attempts to influence physicians' prescribing behavior are a part of everyday life in private medical practice, yet only a few physicians consider themselves to be susceptible to this kind of influence. A more critical attitude among physicians, and the creation of alternative educational events without drug company sponsoring, might lead to more independence and perhaps to more rational and less costly drug-prescribing practices.


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Pharmaceutical companies maintain constant contact with doctors by means of regular visits from pharmaceutical sales representatives (PSR) (1). An estimated 15 000 PSR pay 20 million visits to practices and hospitals in Germany every year (2). The PSR provide information about their companies' latest products and publications. To this end, they use a multitude of advertising strategies in order to increase sales of their products. These strategies include:

- Forging personal relationship with doctors
- Handing over gifts, invitations, and pharmaceutical samples
- Finding out doctors' prescribing habits and personal attitudes
- Promoting off-label use (3–5).

In the United States in 2006, the estimated total marketing expenditure came to some 7 billion US dollars; this equals about 15 000 US dollars per year and doctor (no reliable data exist for Germany, but estimates are based on 2.5 billion euros/year [2]). Most of the money went into the distribution of drug samples, PSR visits, and funding of educational events. Marketing expenditure thus is about double what is spent on research and development (6).

Countries such as the US, Canada, Australia, new Zealand, Great Britain, and Denmark have study data on the type and quality of doctors' contacts with pharmaceutical companies (for example, 7–10), but Germany has not really collected such data so far. A study from 2000 reported by Eckhardt et al. (11) showed that 77% of participants at a German conference for gastroenterologists had received travel expenses from pharmaceutical companies. The study further showed that some 66% did not perceive accepting financial support as incompatible with their professional ethics, nor did they assume that their prescribing behavior would change as a result.

This study aimed systematically to assess the kinds of contacts that take place as well as their quality, by using a survey of specialist physicians in private practice. Another objective was to determine whether alternatives to current practices are envisioned. Particular attention was given to:

- Acceptance of pharmaceutical samples and gifts
- How doctors perceived the extent to which their

**TABLE 1**

Visits, acceptance of gifts, CME events, and services

| | | | | | |
|---|---|---|---|---|---|
| Frequencies of visits | 19% daily | 46% 2–3 times/week | 12% once a week | 8% twice a month | 14% more rarely |
| Visits from individual representatives | 40% up to 4 times a year | 43% up to 6 times/ year | 11% up to 12 times/ year | 1.4% up to twice/month | 1.4% more often than twice a month |
| Duration of visits | 32% up to 5 mins | 48% 5–10 mins | 15% 10–15 mins | 2% >15 mins | |
| Average frequencies with which gifts were accepted | Drug samples 66 times/year | Stationery 34 times/year | Diary 9 times/year | Twice a year dinner invitations | 4% no gifts |
| Acceptance of drug samples | 30% always | 44% often | 18% occasionally | 4% rarely | 2% never |
| Average participation in CME events (2007) | 6.3 independent | 5.2 pharma-financed | | | |
| Financial support for CME events funded by the pharmaceutical companies | 69% catering | 27% accommodation | 23% Travel | | |
| Use of information materials | 53% leafing through | 20% discarded unread | 19% more detailed reading | 5% archiving | |
| Services for drug companies | 43% observational non-interventional studies | 11% advisory activities | 8% presentations | 3% articles in medical journals | |
| Numbers of observational non-interventional studies per year (2007) | 57% none | 24% 1–2 | 17% 3–5 | 2% 6–10 | |
| Honoraria paid by the pharmaceutical industry in 2007 | 50% no honoraria | 34% up to Euro 1000 | 5% Euro 1000–2000 | 6% Euro 2000–5000 | 1% Euro 5000–10 000 |

prescribing behavior, or that of their colleagues, was influenced
- How doctors rated the quality of the information provided to them by the PSR.

## Methods

The authors selected one region in each west Germany and east Germany: the Rhine-Main region and the region around Leipzig-Dresden. The study cohort was selected from the cities of Frankfurt, Wiesbaden, Mainz, Kaiserslautern, and Ludwigshafen in the Rhine-Main region and Dresden, Leipzig, and Chemnitz in the Leipzig-Dresden region. Participants of the "country" cohort were selected from the surrounding rural administrative districts. Altogether 320 neurologists/psychiatrists, 1604 primary care physicians, and 117 specialists in internal medicine/cardiologists were included in the study; telephone directories and professional registers were used to identify these. From the total pool of participants, 2 cohorts per region for each specialty were selected by random number generation; the "country" cohort comprised n = 20 doctors, the "city" cohort n = 30 doctors. The 3 specialties were chosen because according to the 2007 Arzneiverordnungsreport (Germany's drug prescribing report, 12) they incurred the highest prescribing costs.

All 300 specialists received a questionnaire that included 37 questions (see *eQuestionnaire* [in German]), which reflected the situation in 2007. The objective was a response rate of 70% in order to reach reliable conclusions. Telephone contacts with practice assistants and doctors were used to attempt to reach the required response rate. No ethics approval was sought.

The results are presented as percentages and absolute numbers. Wilcoxon tests, Spearman's correlation test and the Kruskal-Wallis test were used for the purpose of statistical analysis only in individual cases. All calculated p-values were two-tailed.

## Results

### Sample

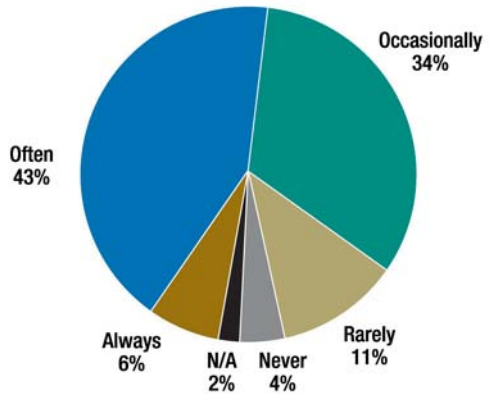
Of the 300 specialists in the survey, 69.3% (n = 208) returned their questionnaire anonymously, including:
- 83% (n = 83) of the neurologists/psychiatrists
- 76% (n = 76) of the primary care physicians
- 49% (n = 49) of the cardiologists.

50% (n = 104) of the responders were men, 47% (n = 98) were women; 3% (n = 6) of participants did not report what sex they were. 38% (n = 79) of those surveyed were aged 40–49 years, and 35% (n = 73) 50–59 years. 50% (n = 104) came from rural regions and 47% (n = 98) from urban regions; no data were available for 3% (n = 6).

### Kinds of contact with the pharmaceutical sales representatives

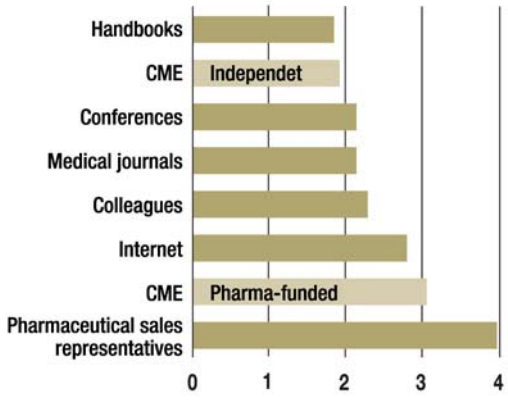
The contacts between doctors and PSR were analyzed according to the following aspects:

**FIGURE 1**




Respondents' (n=208) answers to the questions of how often they felt informed adequately or correctly by pharmaceutical representatives

**FIGURE 2**




Respondents' (n=208) assessment of how objective information sources are (expressed as school grades, with 1 being the highest and 6 the lowest grade in Germany)

**TABLE 2**

Assessment of PSR's intentions and doctors' susceptibility to their influence

| | Self [*1] | Colleagues [*2] | Intention of pharmaceutical sales representative (PSR)[*3] |
|---|---|---|---|
| Never | 9% | 2% | 2% |
| Rarely | 36% | 12% | 5% |
| Occasionally | 47% | 49% | 17% |
| Often | 5% | 17% | 32% |
| Always | 1% | 4% | 44% |

[1]How often did respondents think they were influenced?
[2]How often did respondents think that their colleagues were being influenced (no data available for 16% of cases)?
[3]How often did respondents believe that the PSR want to influence them?
Baseline data: n=205 (300)

**Frequency and duration of PSR visits—**77% of doctors (n = 160) received a minimum of one weekly visit from a PSR. Cardiologists and primary care physicians were contacted significantly more often (73% [n = 73] and 69% [n = 69], respectively) than neurologists/psychiatrists (57% [n = 57]) (p = 0.018). Individual PSR visited practices on average (83% [n = 173]) 4–6 times per year and the maximum duration of their visit was 10 minutes (*Table 1*).

**Acceptance of gifts—**The most commonly accepted gifts were drug samples and stationery (*Table 1*). 8% (n = 17) doctors had not accepted stationery, 15% (n = 31) had not accepted diaries, and 46% (n = 96) had not accepted lunch invitations. Altogether, only 4% (n = 8) of those surveyed had not accepted any gifts at all. 92% (n = 191) accepted drug samples, on a basis that ranged from occasionally to always (*Table 1*). 70% (n = 134) of doctors in this group admitted handing out free drug samples to patients when newly prescribing a drug, if they had a sample available.

**Acceptance of educational events, information material, or practice software systems—**On average, all specialists had attended nearly identical numbers of pharma-sponsored and independent educational events in 2007 (*Table 1*). In 69% of cases, meals were paid for. 73% (n = 152) leafed through the PSRs' information brochures or discarded these unread. 59% (n = 123) of doctors used a practice software system that was not sponsored by an advertiser.

**Observational non-interventional studies and other services for pharmaceutical companies—**In 2007, doctors had mostly conducted non-interventional observations; advisory activities or presentations were rarer (*Table 1*). Some 50% (n = 104) of doctors had not received honoraria from the pharmaceutical companies, the other half mostly 1000 to 2000 euros. Cardiologists had received the biggest honoraria.

### Assessing the quality of the contacts

The quality of the contacts of doctors with PSR was assessed according to the following criteria:

**Objectivity—**49% (n = 102) of doctors said that they felt that the PSR had informed them adequately or correctly only occasionally, rarely, or never (*Figure 1*). With regard to the objectivity of the information, PSR visits received a mark 4 and pharmaceutical educational events a mark 3 (the German school system uses a marking system of 1–6, with 1 being the top mark and 6 the lowest), the lowest scores in the survey (*Figure 2*). 54% (n = 112) of those surveyed reported that non-interventional observations rarely or never yielded medically relevant information, but 25% (n = 28) of these undertook such observational studies none the less. By contrast, 40% (n = 83) believed that this was the case occasionally or often (of these, 72% [n = 60] conducted observations); no data were available for 6% (n = 12).

**Influencing doctors' prescribing behavior—**76% (n = 158) of doctors believed that the PSR often or always intended to influence their prescribing behavior

(*Table 2*). Comparing the number of doctors who felt they were being influenced and the number of those who believed their colleagues were being influenced yielded a statistically significant difference ($p<0.001$): Only 6% (n = 12) of doctors thought that they themselves were often or always influenced, whereas 21% (n = 44) believed that it was actually their colleagues who were influenced (*Table 2*). Further, only 9% (n = 19) of doctors thought that they were never influenced, but they believed that this was the case for merely 2% (n = 4) of their colleagues. This effect was most pronounced for primary care physicians, of whom only 1.3% (n = 1) categorized themselves as always or often influenced, whereas 47.4% of primary care physicians assumed that this was the case for their colleagues. One observation applied to all participants in the survey: The more gifts the surveyed doctors accepted the more likely they were to categorize themselves as being influenced ($r = 0.266$; $p<0.001$).

**Positive and negative aspects of the PSRs' visits—**The free text commentaries about positive and negative aspects of PSR visits showed that the most often mentioned positive effect was provision of information, with the offer of educational events in second place, and drug samples in third place (*Table 3*). On the other hand, doctors experienced pushiness or over-familiarity, attempts to influence them, and pressure to purchase from the representative as disruptive; the same sentiment was expressed for the actual amount of time taken up by PSR visits.

39% (n = 81) of survey participants liked prescribing new medications in order for their patients to benefit from new developments as quickly as possible. 56% (n = 116) preferred to prescribe medications that were tried and tested; no data were available for 5% (n = 10). Of those who liked prescribing new drugs, 69% (n = 56) would regret the cessation of PSR visits, and 80% (n = 65) could not think of any alternatives to the visits. Of those who preferred prescribing established medications, 40% (n = 46) would regret the cessation of visits, and 57% (n = 66) could not think of alternatives. 93% (n = 108) of those who preferred established medications believed that the representatives were occasionally to always intending to influence their behavior, a belief held by 80% (n = 65) of those who were more inclined to prescribe new drugs. 61% (n = 49) of those who prescribed new drugs felt that they had often to always received adequate information and advice. By contrast, only 42% (n = 49) of doctors who preferred prescribing established medications felt they had often to always been informed to an adequate extent.

**TABLE 3**

Free text responses to the question of what doctors appreciate about pharmaceutical sales representatives (positive factors) and what they don't like (negative factors)

| Positive | n | Negative | n |
|---|---|---|---|
| Information | 65 | Pushiness or over-familiarity | 30 |
| CME events | 19 | Attempts to influence/pressure to purchase | 30 |
| Samples | 16 | Time loss | 25 |
| Professional/technical competence | 15 | Lack of objectivity | 10 |
| Brief meetings | 12 | Lacking professional/technical competence | 9 |
| Objectivity | 8 | No sense of doctor's time pressures | 6 |
| Personal contacts | 8 | Visits too frequent | 6 |
| Restraint/reserve | 8 | Superfluousness | 6 |
| Openness | 6 | Doctored/incorrect statistics | 5 |
| Information materials for patients | 6 | "Maligning" or putting down the competition | 3 |
| Gifts | 5 | Exaggerated claims | 2 |
| Friendliness | 5 | Attempts to lecture | 2 |

Multiple mentions possible

#### Consequences and alternatives

52% (n = 108) of doctors would regret the cessation of PSR visits; 45% (n = 94) would not regret this, and no data were available for 3% (n = 6). Consistent with the aspects that were described as positive, doctors would miss the provision of information, educational events, and free drug samples. 85% (n = 92) of those who

**TABLE 4**

Suggested alternatives to pharmaceutical sales representatives (free text responses)

| Alternatives | n |
|---|---|
| Written information by post or by email | 24 |
| Pharma-independent CME events | 13 |
| Information through medical journals | 8 |
| Independent study | 7 |
| Stronger restrictions for pharmaceutical sales representatives | 3 |
| Advisors that are pharma-independent | 2 |
| Information from pharmacies or pharmaceutical associations | 1 |
| Samples by post | 1 |

Multiple mentions possible

would regret the cessation of visits from PSR could not see any alternative for those visits. Of those 45% (n = 94) who would not regret the cessation of visits, only 46% (n = 43) saw no alternative for the visits, whereas 54% (n = 51) could think of alternatives. *Table 4* lists the most frequently mentioned alternatives.

## Discussion

As far as the authors are aware, the current study is the first independent study in Germany that systematically collected data on attitudes of German doctors about their contacts with pharmaceutical representatives.

The results confirm that doctors and PSR are in regular contact as a result of PSR visits. The pharmaceutical companies' understandable desire to induce doctors to prescribe their products corresponded to the perception in 3 in every 4 doctors that the PSR often or always want to influence their prescribing behavior. Simultaneously, a majority of doctors believed that they are mostly immune to such attempts. Only 6% (n = 12) of doctors thought that they were often or always influenced; 9% (n = 19) believed that they were never influenced. Most doctors (83% [n = 173)] believed that they were rarely or only occasionally influenced. Responses to the question of how doctors assessed this situation vis-à-vis their colleagues showed, however, that doctors thought that colleagues were 3–4 times more likely to be influenced than they were themselves. This is consistent with international data (10) and shows clearly that doctors are far less critical with regard to their own attitudes than their colleagues' attitudes as far as dealing with pharmaceutical companies is concerned.

A first step towards change would be to adopt a more self critical attitude in the sense of understanding one's own readiness to be influenced. Several controlled studies have shown that even small gifts and information can exert influence. Scientific symposia, which are offered in hotels and at pharmaceutical manufacturers' expense (13), or industry sponsored CME courses (14) increase the number of prescriptions for the advertised medications, and close contacts with the pharmaceutical industry increase the likelihood that doctors will plead for including the drugs from those manufacturers in hospital drug formularies (15). A recent study showed that small gifts to medical students increased positive attitudes regarding the advertised substances at a later date (16). Another study showed that doctors whose prescription costs were high were more likely to receive visits from PSR and did so more often (17). A comparison with prescription costs was, however, not possible in the context of this study.

Since doctors think of themselves as more influenced the more gifts they receive, a second necessary step would entail changing their behavior with regard to accepting gifts and favors. Since doctors usually assess their own weakness vis-à-vis influencing strategies as low, they will accept gifts in spite of this (10). In the current study, only 2% (n = 4) had not accepted drug samples and 4% (n = 8) had not accepted any gifts or invitations. Only 15% (n = 2) of doctors who felt they are always or often influenced did not accept gifts.

According to recent studies, short seminars that focus on the subject of interactions with pharmaceutical companies have not resulted in lasting changes in behavior or attitudes (18, 19). Be that as it may, doctors should learn about the marketing strategies used by pharmaceutical companies, starting from their undergraduate training and throughout their entire career, in order to develop awareness of the subject. Initiatives such as introducing an obligatory code of conduct for doctors, which correlates with measurable changes in attitudes and behaviors ([8, 19], or the doctors' initiative "Mein Essen zahl ich selbst" [MEZIS, the German "No free lunch" organization," www.mezis.de]) currently reach only a small proportion of doctors. If doctors do not succeed in setting out a comprehensive code of conduct, then it can be expected that legal changes will stipulate behavior changes, as is currently the case in the US—for example, by changing the rules of professional practice and by imposing a stop on all gifts and invitations.

An important requirement for changing behaviors is transparency, and this study has made a contribution in that sense. Such transparency could be created effectively by a legal rule that obliges drug companies to openly declare fees paid to doctors for educational events, etc, as is already being practiced in parts of the US. A legal rule that hinders disclosure of doctors' individual prescribing figures and thus prevents targeted influencing of doctors might be another effective measure to reduce doctors' vulnerabilities in this area further.

In the current study, many doctors regarded the provision of information by PSR as essential. It is therefore necessary to ensure that doctors receive more

objective information than they are given at the educational events organized by pharmaceutical companies or by means of PSR visits. As long as the PSR are the main source of information regarding drug use they will continue to be in and out of German doctors' practices. Independent educational events will therefore have to be promoted proactively, and the same is true of medical journals that are not financed through drug advertising and other drug company support and that provide critical and independent information. It needs to be borne in mind, however, that even if sufficient choices for independent educational events were available these would not necessarily be preferred by doctors—a recently published study showed that significantly more doctors participate in such events if free meals are provided (8). Doctors have obviously become used to receiving education at no cost to themselves—in other professional groups this is anything but taken for granted.

The subject of this study—industry's option to influence doctors by means of PSR visits and gifts—is only one of many ways of influencing. Further examples include biasing the protocols, results, and interpretations of studies, and influencing trial registration and publication as well as authorship of scientific articles and access to study data. These forms of influence have recently been described in detail (21–23).

## Conclusion

Both a more critical attitude among doctors vis-à-vis the pharmaceutical industry's attempts to influence them and promoting alternative information services would result in greater independence as well as more rational and possibly cheaper drug therapy.

**KEY MESSAGES**

- Almost 80% of doctors received at least one weekly visit from a pharmaceutical sales representative (PSR).
- The majority of doctors thought they were mostly immune to the drug industry's attempts to influence them and accepts gifts.
- Doctors thought that their colleagues were 3 times more likely to be influenced than they were themselves.
- About 50% of doctors would regret the cessation of PSR visits owing to the ensuing absence of information, educational events, and drug samples.
- A more critical attitude among doctors and active promotion of alternative information services could result in more independence as well as more rational and possibly cheaper prescribing.

This study includes substantial parts of Simone Brandtönies's doctoral dissertation.

**Conflict of interest statement**

Professor Lieb is a member of MEZIS. Ms Brandtönies declares that no conflict of interest exists according to the guidelines of the International Committee of Medical Journal Editors.

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eQuestionnaire available at:
www.aerzteblatt-international.de/10m0392